UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8, MONTANA OFFICE
FEDERAL BUILDING, 10 West 15th St, Suite 3200
HELENA, MONTANA 59626

Ref: 8MO

May 6, 2009

Helena National Forest
Attn: Dave Carroll
2880 Skyway Drive
Helena, MT 59602

Re: CEQ # 20090079, EPA Comments on Cabin Gulch Vegetation Treatment Project DEIS

Dear Mr. Carroll:

The Environmental Protection Agency (EPA) Region VIII Montana Office has reviewed the revised Draft Environmental Impact Statement (DEIS) for the Helena National Forest's Cabin Gulch Vegetation Treatment Project in accordance with our responsibilities under the Section 102(2)(C) of National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. Section 309 of the Clean Air Act directs EPA to review and comment in writing on the environmental impacts of any major Federal agency action, and publish a summary of our comments in the Federal Register. EPA's comments include a rating of both the environmental impact of the proposed action and the adequacy of the NEPA document (see summary of EPA's DEIS rating system enclosed).

The EPA remains supportive of the proposed Cabin Gulch Vegetation Treatment Project purpose and need to restore fire adapted ecosystems, reduce hazardous fuels, produce timber, and improve water quality in the project area. We appreciate the inclusion of "water quality improvement" in the purpose and need statement for the proposed project, and the attention given to the need to reduce sediment delivery in tributaries to Deep Creek, a Clean Water Act Section 303(d) listed waterbody (water quality impaired), in order to meet the State's Total Maximum Daily Load (TMDL) water quality targets for Deep Creek. It is important that the proposed project be consistent with the completed Deep Creek TMDL to promote water quality improvement and restoration of full support of beneficial uses in Deep Creek. The TMDL goals for Deep Creek are to reduce sediment loads and percent fine sediment in stream substrates, reduce erosive banks, restore channel length, increase recruitment of spawning wild trout, and reduce thermal problems and dewatering.

Sediment from roads, particularly poorly maintained roads with inadequate road drainage is a major cause of adverse water quality impacts in forests. EPA fully supports road maintenance and BMP and drainage improvements to forest roads, since these are critical to protecting aquatic health. We are pleased that road BMPs would be improved with all action alternatives, and such improvements would reduce average annual sediment delivery to area streams by 9.8 or 9.9 tons per year, and that ten undersized culverts would be replaced in all project alternatives. EPA also supports road decommissioning and reductions in road density, since increasing road density, especially road stream crossing density, has been inversely correlated with aquatic health in many areas. Lower road densities are often associated with improved trout habitat, as well as improved wildlife habitat and security.

We want to express our particular support for the need to obliterate Forest Road 4181 that lies directly along the West Fork Cabin Gulch, since the DEIS states this road has a "high" rating for cumulative watershed/geologic concern; is a high risk to watershed values having 9 road/stream interactions, 0.98 miles in highly erosive soils, and 2.4 miles in the Riparian Habitat Conservation Area (RHCA); and is severely rutted with actively eroding gullies present along almost the entire road. The DEIS states that fine sediment in spawning habitat for West Fork Cabin Gulch is outside the upper range of variation for sediment management goals for fisheries, and this is very likely due to this road, and that recovery in W. FK Cabin Gulch would be much less with Alternative 4 compared with Alternatives 2 and 3 where road # 4181 is planned to be decommissioned.

We support selection of Alternative 3 as the preferred alternative, since it would appear to be most consistent with the reduced sediment delivery goals of the Deep Creek TMDL. Treatment units with potential to deliver sediment have been dropped from Alternative 3, and Alternative 3 includes the road BMP upgrades, culvert upgrades and removal of Forest Road 4181 that provide the water quality restoration components of the project, and 3 also includes the lowest amount of new road construction that could result in sediment production and transport. It appears to us that Alternative 3 would have the greatest potential to improve water quality in the project area, and would be most consistent with the reduced sediment delivery goals of the Deep Creek TMDL. We would be very concerned about selection of Alternative 4, since Alternative 4 would not address the adverse water quality and fisheries habitat impacts of this road.

The EPA's further discussion and more detailed questions, comments, and concerns regarding the analysis, documentation, or potential environmental impacts of the revised Cabin Gulch Vegetation Treatment Project DEIS are included in the enclosure with this letter. Based on the procedures EPA uses to evaluate the adequacy of the information and the potential environmental impacts of the proposed action and alternatives in an EIS, the DEIS has been rated as Category EC-2 (Environmental Concerns - Insufficient Information). A copy of EPA's rating criteria is attached. We recommend additional analysis and information to fully assess and mitigate all potential impacts of the management actions.

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The EPA appreciates the opportunity to review and comment on the DEIS, and the opportunity to review the proposed project in the field. If we may provide further explanation of our comments please contact Mr. Steve Potts of my staff in Helena at 406-457-5022 or in Missoula at 406-329-3313 or via e-mail at potts.stephen@epa.gov . Thank you for your consideration.

Sincerely,

John F. Wardell
Director
Montana Office

Enclosures
cc: Larry Svoboda/Connie Collins, EPA 8EPR-N, Denver
Mark Kelley, MDEQ, Helena

EPA COMMENTS ON THE CABIN GULCH VEGETATION TREATMENT PROJECT REVISED DRAFT ENVIRONMENTAL IMPACT STATEMENT

Brief Project Overview:

The Helena National Forest (KNF), Townsend Ranger District has developed the Cabin Gulch Vegetation Treatment EIS to evaluate alternatives and disclose environmental impacts for management activities to restore fire adapted ecosystems, reduce hazardous fuels, produce timber, and improve water quality in the project area. The project area is approximately 15,600 acres in size, and is located approximately 15 miles east of Townsend, Montana. It includes the watersheds of Holloway Gulch, North Fork Deep Creek, West Fork Cabin Gulch, Middle Fork Cabin Gulch, and East Fork Cabin Gulch, which are tributaries to Deep Creek located just south of the project area. Private lands bound the area on the southwest with the rest of the border being National Forest System (NFS) lands. The Mount Baldy Inventoried Roadless Area is to the north of the project area.

In August of 2006, the HNF released the Cabin Gulch DEIS, but the interdisciplinary team (IDT) met in late 2006 to discuss DEIS comments, and an opportunity arose to use a new analysis tool developed by the Northern Region Geospatial Group, the Vegetation Map Product (VMap). It is a map base developed using 2005 satellite imagery and Ecognition software, that has attributes for vegetation type, size class, and canopy cover. New modeling efforts were carried out using Forest Inventory Analysis (FIA) plot data and FIA grid intensification data. This use of new information resulted in different resource base data for vegetation and wildlife habitat analysis, and changes to the alternatives were made. The Responsible Official determined that a new DEIS was needed to provide the public an opportunity to comment on these changes and the subsequent environmental effects analysis. Therefore, the decision was made to produce a new DEIS to *supersede and replace* the August 2006 DEIS for the Cabin Gulch Vegetation Treatment Project. Detailed descriptions of the various modeling efforts and data can be found in the individual resource reports in the project file.

Three action alternatives and no action were evaluated in the DEIS. Alternative 1 is the No Action alternative, which provides a baseline for comparison of the environmental effects of the other alternatives.

Alternative 2, the proposed action, was designed to restore fire-adapted ecosystems, create conditions to reduce high-intensity wildfires, and improve the water quality in the project area, specifically, West Fork Cabin Gulch. Alternative 2 would emphasize cost-effective timber harvest, reduce the susceptibility of timbered stands to insect and disease agents, reduce ladder fuels and fine woody debris, create more heterogeneous stands, increase structural diversity, capture the economic value of trees killed by insect and disease, promote aspen stand health/size, promote the reproduction of whitebark pine, and reclaim grassland and shrubland communities. This alternative was designed to modify Fire Regime Condition Class (FRCC), tree density, species mix, stand components, and basal area to promote resilience to disturbances such as

insect epidemics and high-intensity wildfires. Alternative 2 includes 3,337 acres of vegetative treatments, with 2,336 acres of intermediate harvest and 360 acres of regeneration harvest (34,117 CCF, 1,382 acres tractor harvest, 810 acres cable harvest, 450 acres helicopter); and 611 acres of prescribed burning; 1.6 miles of temporary road construction, 6.7 miles of short-term road construction, 0.7 miles long-term construction, 2.8 miles of road decommissioning and 36.8 miles of road BMP installation.

Alternative 3 was designed to address issues concerning big game security, mortality of whitebark pine and winter recreation and non-motorized trails. Alternative 3 includes 2,130 acres of vegetative treatments, with 1,390 acres intermediate harvest and 307 acres of regeneration harvest (20,994 CCF, 946 acres tractor harvest, 478 acres cable harvest, 224 acres helicopter); and 433 acres of prescribed burning; 0.7 miles of temporary road construction, 1.7 miles of short-term road construction, 0.7 miles long-term construction, 1.7 miles of long term road storage; 7.0 miles of road decommissioning and 30.7 miles of road BMP installation. Non-motorized recreation is enhanced by creation of trail on the decommissioned segment of FDR# 4181 in the West Fork of Cabin Gulch drainage, yet access is provided via new road construction across the upper end of FDR 4831 and the 423-J1 spur.

Alternative 4 was designed to address issues with road closures and new road construction and long-term transportation planning. Alternative 4 includes 3,337 acres of vegetative treatments, with 2,336 acres of intermediate harvest and 360 acres of regeneration harvest (34,117 CCF, 1,382 acres tractor harvest, 810 acres cable harvest, 450 acres helicopter); and 611 acres of prescribed burning; 2.3 miles of temporary road construction, 1.3 miles of short-term road construction, 5.4 miles long-term construction gated, 0.5 miles of road decommissioning and 36.8 miles of road BMP installation.

Comments:

1. We appreciate the inclusion of clear narrative descriptions and maps describing alternatives (Figures 2 through 4), as well as tables describing and comparing important features of alternatives in Chapters 2 (Tables 3 through 9). These maps and tables facilitate improved project understanding, help define issues, and assist in evaluation of alternatives providing a clearer basis of choice among options for the decisionmaker and the public in accordance with the goals of NEPA.

Water Resources

2. We also appreciate the inclusion of "water quality improvement" in the purpose and need statement for the proposed Cabin Gulch Vegetation Treatment Project, as well as recognition of the need to reduce sediment delivery in tributaries to Deep Creek, an impaired waterbody, to meet the State of Montana's Total Maximum Daily Load (TMDL) sediment target for Deep Creek (page 11). It is important that the proposed project be consistent with the completed TMDL for Deep Creek in order to promote water quality improvement and restoration of full support of beneficial uses in Deep

Creek. The TMDL goals for Deep Creek are to reduce sediment loads and percent fine sediment in substrates, and reduce erosive banks, restore channel length, increase recruitment of spawning wild trout, and reduce thermal problems and dewatering.

3. Figures 2-4 showing alternatives only show locations of North Fork of Deep Creek, West Fork of Cabin Gulch, and East Fork Cabin Gulch, although it is stated that Holloway Gulch, and the Middle Fork Cabin Gulch are also main drainages in the area (page 1). The Middle Fork of Deep Creek and Holloway Gulch are not shown on the alternatives maps. It would be helpful if an overall watershed map were included in the EIS that clearly showed all the primary project area tributaries of Deep Creek (Holloway Gulch, North Fork Deep Creek, West Fork Cabin Gulch, Middle Fork Cabin Gulch, and East Fork Cabin Gulch). It is helpful to have maps showing all waterbodies in a project area and their proximity to treatment units and roads.

   It would also be helpful if the extent of proposed timber harvest in each tributary drainage were clearly identified (e.g., identify treatment units or acreage of timber harvest in each drainage). We are particularly interested in the extent of summer tractor harvests in each drainage, since such harvesting methods have greater potential to cause sediment production/transport. This would allow improved understanding of the potential sediment transport effects of proposed timber harvests on streams.

4. Sediment from roads, particularly poorly maintained roads with inadequate road drainage is a major cause of adverse water quality impacts in forests. EPA fully supports road maintenance and BMP and drainage improvements to forest roads, since these are critical to protecting aquatic health. EPA also supports road decommissioning and reductions in road density, since increasing road density, especially road stream crossing density, and density of roads encroaching on streams and riparian areas. Lower road densities are often associated with improved trout habitat, as well as improved wildlife habitat and security.

   The DEIS indicates that application of BMPs to roads in the project area particularly treatments for FR 4181 and FR 423-N1 and 423-N2 would reduce road sediment delivery to streams (page 299). We are pleased that road BMPs would be improved with all alternatives, and such improvements would reduce average annual sediment delivery to area streams by 9.8 or 9.9 tons per year (Tables 133, 136, 138). We are also pleased that ten undersized culverts would be replaced in all project alternatives (page 297). In addition we are pleased that a riparian exclosure fence was installed to protect overgrazed areas of a tributary to North Fork Deep Creek that had suffered from livestock trampling (page 297). This riparian fencing is reported to have improved streambank stability and reduced sedimentation in the North Fork Deep Creek (page 337).

   We also want to express our particular support for the need to obliterate Forest Road 4181 that lies directly along the West Fork Cabin Gulch, since the DEIS states this road has a "high" rating for cumulative watershed/geologic concern; is a high risk to

watershed values having 9 road/stream interactions, 0.98 miles in highly erosive soils, and 2.4 miles in the Riparian Habitat Conservation Area (RHCA); and is severely rutted with actively eroding gullies present along almost the entire road (page 8). The DEIS also states that fine sediment in spawning habitat for West Fork Cabin Gulch is outside the upper range of variation for sediment management goals for fisheries (page 304), and this is very likely due to this road.

It is clear, therefore, that Forest Road 4181 is adversely affecting water quality and fisheries habitat in West Fork Cabin Gulch. We agree with the statement in the DEIS that there is a need to improve or eliminate this road to help reduce water quality concerns in the West Fork Cabin Gulch and subsequently the greater Deep Creek drainage (page 8). We fully support decommissioning of Forest Road 4181 by recontouring a 2.8 mile segment of this road to a natural slope as proposed in Alternatives 2 and 3. Sediment modeling predicts average fine sediments in trout spawning habitat would trend downward from 45.3% to reference conditions or about 32.7% in the short and long term due to closure and obliteration of this road (page 330). We would be very concerned about selection of Alternative 4, since Alternative 4 would not address the adverse water quality and fisheries habitat impacts of this road. The DEIS states that recovery in W. FK Cabin Gulch would be much less with Alternative 4 compared with Alternatives 2 and 3 where road # 4181 is planned to be decommissioned (page 334).

We also encourage Helena NF consideration of additional road decommissioning opportunities within the project area, particularly roads closer to streams with reduction in road stream crossings. Closures of roads near streams with many stream crossings are more likely to have water quality benefits than closure/decommissioning of roads on upper slopes and ridges.

In addition, we want to note that there is often a relationship between higher road density and increased forest use and increased human caused fire occurrences. Reduction in road density, therefore, may also reduce risks of human caused fires, which could be important in an area with high fuels/fire risk and/or wildland/urban interface issues.

5. Construction of roads, even temporary roads, is one of the more significant aspects of a project in terms of environmental effects, since road construction greatly increases the possibility of erosion and sediment transport from erosion of road surfaces and cut and fill slopes. Alternatives 2 includes 7.4 miles of specified road construction and 1.6 miles of temporary road construction; Alternative 3 includes 3.7 miles of specified road construction and 0.7 miles of temporary road construction; and Alternative 4 includes 6.7 miles of specified road construction and 2.3 miles of temporary road construction. Alternative 3 includes significantly less road construction, which we support since it would result in reduced sediment production and transport.

It is important to properly plan, design and locate roads to minimize adverse water quality effects, and to adequately maintain new temporary and existing roads, since this is

critical to protecting water quality. Reducing proximity of roads to streams and minimizing road stream crossings are critical to reducing impacts of roads to water quality and aquatic habitat. We realize Helena NF staff are knowledgeable regarding road planning, design, construction and maintenance measures to minimize water quality effects, however, we still want to share EPA's general recommendations regarding roads for your information and consideration. They are as follows:

* minimize road construction and reduce road density as much as possible to reduce potential adverse effects to watersheds;

* locate roads away from streams and riparian areas as much as possible;

* locate roads away from steep slopes or erosive soils;

* minimize the number of road stream crossings;

* stabilize cut and fill slopes;

* provide for adequate road drainage and control of surface erosion with measures such as adequate numbers of waterbars, maintaining crowns on roads, adequate numbers of rolling dips and ditch relief culverts to promote drainage off roads avoid drainage or along roads and avoid interception and routing sediment to streams;

* consider road effects on stream structure and seasonal and spawning habitats;

* allow for adequate large woody debris recruitment to streams and riparian buffers near streams;

* properly size culverts to handle flood events, pass bedload and woody debris, and reduce potential for washout;

* replace undersized culverts and adjust culverts which are not properly aligned or which present fish passage problems and/or serve as barriers to fish migration;

* use bridges or open bottom culverts that simulate stream grade and substrate and that provide adequate capacity for flood flows, bedload and woody debris where needed to minimize adverse fisheries effects of road stream crossings.

We also encourage conduct of inspections and evaluations to identify conditions on roads and other anthropogenic sediment sources in the watersheds in the project area that may cause or contribute to sediment delivery and stream impairment, and to include activities in the project to correct as many of these conditions and sources as possible.

Blading of unpaved roads in a manner that contributes to road erosion and sediment

transport to streams and wetlands should be avoided. It is important that management direction assures that road maintenance (e.g., blading) be focused on reducing road surface erosion and sediment delivery from roads to area streams. Practices of expediently sidecasting graded material over the shoulder and widening shoulders and snow plowing can have adverse effects upon streams, wetlands, and riparian areas that are adjacent to roads. Road use during spring breakup conditions should also be avoided. Snow plowing of roads later in winter for log haul should also be avoided to limit runoff created road ruts during late winter thaws that increase road erosion (i.e., ruts channel road runoff along roads).

Forest Service Region 1 provides training for operators of road graders regarding conduct of road maintenance in a manner that protects streams and wetlands, (i.e., Gravel Roads Back to the Basics). If there are road maintenance needs on unpaved roads adjacent to streams and wetlands we encourage utilization of such training (contact Donna Sheehy, FS R1 Transportation Management Engineer, at 406-329-3312).

We also note that there are training videos available from the Forest Service San Dimas Technology and Development Center for use by the Forest Service and its contractors (e.g., "Forest Roads and the Environment"-an overview of how maintenance can affect watershed condition and fish habitat; "Reading the Traveled Way" -how road conditions create problems and how to identify effective treatments; "Reading Beyond the Traveled Way"-explains considerations of roads vs. natural landscape functions and how to design maintenance to minimize road impacts; "Smoothing and Reshaping the Traveled Way"-step by step process for smoothing and reshaping a road while maintaining crowns and other road slopes; and "Maintaining the Ditch and Surface Cross Drains"-instructions for constructing and maintaining ditches, culverts and surface cross drains).

6. The DEIS indicates that most streams within the project area are properly functioning with the exception of the lower portion of North Fork Deep Creek, Holloway Creek, and a small portion of one of the tributaries to North Fork Deep Creek, which are rated as non-functioning or functioning-at-risk with a downward trend (page 301). The DEIS also states that these streams are expected to remain in a non-functioning or functioning-at-risk condition under all action alternatives (page 303, 304, 306).

We are concerned about the poor condition of these tributary segments of Deep Creek. Due to lack of clear watershed maps in the DEIS and uncertainty regarding proposed treatments in the drainages of North Fork Deep Creek and Holloway Creek, the extent of proposed timber harvests in these drainages of non-functioning or functioning-at-risk streams are unclear. We recommend that additional information be provided in the FEIS regarding proposed treatments and activities in the drainages of these non-functioning or functioning-at-risk streams. We would not support timber harvest and road construction activities in the non-functioning or functioning-at-risk streams unless additional watershed restoration components were also included among the project activities to help arrest the downward trend in these non-functioning or functioning-at-risk stream

segments to put them on a upward trend.

We are pleased that it is stated that road treatments would reduce existing road sediment delivery by about 4.0 tons annually in the North Fork Deep Creek drainage and another 4.4 tons annually in the Holloway Gulch tributary, and this would result in decrease in average fine sediment levels in North Fork Deep Creek trout spawning habitat from 40% baseline levels to 37.1% in the short and long term (page 333). It appears that such benefits would accrue in all action alternatives.

We recommend consideration of additional watershed restoration components to arrest the downward trend in drainages of these non-functioning or functioning-at-risk stream segments tributary to Deep Creek and put them on an upward trend. We would anticipate that improvements in the upstream tributaries of Deep Creek would result in benefits to Deep Creek.

7. For Alternatives 2 and 4 estimates of average sediment delivery appear to total 8.7 tons/year from treatment units in four drainages, with 3% to 13% ranges of probabilities that there would be sedimentation (Tables 134 and 139, pages 302, 305). We did not see a table providing similar disclosure of estimated sediment delivery from treatment units for Alternative 3, but it is stated that some treatment units were redesigned and dropped in Alternative 3, and SMZ buffers were expanded to reduce the risk of sediment delivery in Alternative 3 from up to a 70 percent chance of delivering over 300 tons of sediment to project area streams to zero percent chance of delivering sediment during the first year following treatment (page 304). The reason for this reduction in risk of sediment delivery results from the removal of several treatment units near streams in Alternative 3. Comparison of data in Tables 149, 151, and 152 for Alternatives 2, 3, and 4 respectively (pages 330-334) show that Alternative 3 would result in lower amounts of fine sediment in spawning habitat in year 1 than the other action alternatives.

The analyses of equivalent clearcut acres/water yield show water yield increases would be less than 8 percent and within guidelines set by DEQ for all action alternatives (Tables 135, 137, and 140). Although it appears that there would be a cumulative water yield increase in the Cabin Gulch watershed under Alternatives 2 and 4 of 10.5 percent, which is above the DEQ guidelines (page 308). The cumulative water yield increased for Alternative 3 in the Cabin Gulch watershed would be 8.5 percent (page 309). The DEIS states that effects to channel stability from water yield increases would likely not be detectable given the character of the stream channels.

The DEIS also says that all alternatives provide reductions in sediment delivery to stream channels from road BMPs and decommissioning that would exceed the amount of sediment delivery predicted from treatment units (page 310). Alternatives 2 and 4 would result in about 8.7 tons of new sediment with a probability of 13% or less of delivering to Deep Creek as a function of vegetation treatments (page 336). The estimated range of probability for sediment delivery from vegetation treatments with Alternative 3 appears

to be zero. Treatment units with potential to deliver sediment have been dropped from Alternative 3, and Alternative 3 includes the road BMP upgrades, culvert upgrades and removal of Forest Road 4181 that provide the water quality restoration components of the project. Alternative 3 also includes the lowest amount of new road construction that could result in sediment production and transport.

It appears to us, therefore, that Alternative 3 would have the least potential to generate new sediment production and includes as many or more sediment reduction benefits as the other action alternatives, and thus, would have the greatest potential to improve water quality in the project area. Accordingly, we support selection of Alternative 3 as the preferred alternative, since it would appear to be most consistent with the reduced sediment delivery goals of the Deep Creek TMDL.

8. The DEIS states that the active Ray Creek and North Fork livestock grazing allotments are within the project area, and that proposed project vegetation treatments have the potential to improve forage availability and attract livestock into treated areas (page 339). Temporary roads could increase livestock access into areas not normally accessible to livestock. It is not known how the livestock would respond when units are harvested, and therefore, additional fencing and water developments may be necessary to keep livestock out of sensitive areas (page 342). We appreciate the disclosure of mitigation measures necessary to make livestock grazing compatible with the project, and support use of fencing, water developments and other grazing management measures to reduce livestock impacts on sensitive areas, particularly streams, wetlands and riparian areas. We are also pleased that the allotment management plan for North Fork was updated in 2007 and is consistent with Forest Plan standards, and the Ray Creek AMP revision is planned for 2009 (page 339).

9. The DEIS identifies 12 "sensitive" soils or landtypes with greater vulnerability or risk of detrimental soil disturbance such as erosion, compaction, and mass wasting (landtypes 12A, 101, 14B, 56, 56A, 80, 59, 59B, 79, 90, 790, and 791, page 261). We generally recommend avoidance of timber harvest and road construction in areas with high risk of sediment production or erosion potential and areas highly susceptible to mass failure, and encourage use of harvest/yarding methods that reduce ground disturbance and sediment production and transport risks when harvesting timber on erosive soils or steep slopes to reduce adverse effects to soil and water quality.

While we have some concerns about the potential for erosion and soil and water quality impacts during timber harvests, we appreciate the identification and discussion of the extent to which temporary road construction, timber harvest and prescribed burning would take place on sensitive soils in the Cabin Gulch Vegetation Project. We are pleased that less disturbing harvest methods and mitigation measures are proposed to reduce detrimental soil effects (e.g., skyline and helicopter logging, hand thinning, and logging during winter on snow and frozen ground, avoiding equipment operation on steep slopes exceeding 35%; retention of coarse woody debris). We are also pleased that

mitigation measures and watershed BMPs to be used to protect soil productivity, sensitive soils, and water quality are identified in the DEIS (pages 20-26).

Additional measures to protect soils and reduce erosion for your consideration include placing restrictions on skidding with tracked machinery in sensitive areas, ripping skid trails and landings to decompact soils, and adding slash to ripped surfaces. Are the proposed mitigation measures and less disturbing logging methods believed to be adequate to protect soils and avoid higher levels of sediment production and transport?

10. We are also pleased that the project has been designed to retain 5 tons per acre of coarse woody debris on dry habitat types and 10 tons per acre on all other habitat types, and that additional woody biomass would be retained as snags (page 277). It is important that adequate woody debris is retained on site to maintain soil productivity.

Will adequate field monitoring and analysis be carried out to assure that the Region 1 soil quality thresholds are not exceeded (i.e., <15% detrimental soil disturbance)?

Wetlands

11. EPA considers the protection, improvement, and restoration of wetlands and riparian areas to be a high priority. Wetlands and riparian areas increase landscape and species diversity, and are critical to the protection of designated water uses. Executive Order 11990 requires that all Federal Agencies protect wetlands. In addition national wetlands policy has established an interim goal of **No Overall Net Loss of the Nation's remaining wetlands**, and a long-term goal of increasing quantity and quality of the Nation's wetlands resource base. Wetland impacts should be avoided, and then minimized, to the maximum extent practicable, and then unavoidable impacts should be compensated for through wetland restoration, creation, or enhancement.

Riparian areas and wetlands are discussed in the Hydrology Section of Chapter 3, and on pages 198, 199. We are pleased riparian areas would have at least a 300 foot burn buffer around ephemeral, intermittent and perennial stream channels (page 303, 304). The extent of the proposed riparian buffers around timber harvest units are less clear. The riparian timber harvest buffers adjacent to streams should be more clearly identified. We support use of no harvest buffers to wetlands (e.g., 300 foot no harvest buffer adjacent to perennial fish bearing streams), and use of BMPs that are protective of wetlands such as no heavy equipment operation in wetlands. We also believe treatment units should be reviewed in the field to determine the presence of wetlands and identify wetlands on the Sale Area Map so that timber contractors will be able to avoid them. We appreciate the disclosure of wetlands in treatment unit #59, and are pleased that mechanical tree removal is unlikely in this unit (pages 303, 306).

Riparian buffers should protect the physical integrity of aquatic ecosystems; restore or maintain water quality and hydrologic processes; provide adequate woody debris

sufficient for physical and biological complexity; provide adequate stream shading; provide habitats for riparian or wetland dependent species; and restore or maintain naturally functioning riparian vegetation communities. We recommend use of

Monitoring

12. We did not see much discussion of project monitoring in the DEIS. The DEIS reader is referred to the Forest Plan and specialists reports for monitoring information (page 26). We believe monitoring should be an integral part of land management. The EPA endorses the concept of adaptive management whereby effects of implementation activities are determined through monitoring (i.e., ecological and environmental effects). It is through the iterative process of setting goals and objectives, planning and carrying out projects, monitoring impacts of projects, and feeding back monitoring results to managers so they can make needed adjustments, that adaptive management works. In situations where impacts are uncertain, monitoring programs allow identification of actual impacts, so that adverse impacts may be appropriately mitigated.

The EPA particularly believes that water quality/aquatics monitoring is a necessary and crucial element in identifying and understanding the consequences of one's actions, and for determining effectiveness in BMPs in protecting water quality. The achievement of water quality standards for non-point source activities occurs through the implementation of BMPs. Although BMPs are designed to protect water quality, they need to be monitored to verify their effectiveness. If found ineffective, the BMPs need to be revised, and impacts mitigated. We encourage adequate monitoring budgets for conduct of aquatic monitoring to document BMP effectiveness and long-term water quality improvements associated with road BMP work and road decommissioning.

We recommend that a summary of proposed project monitoring and adaptive management be included as an Appendix to the FEIS. Examples of potential aquatic monitoring parameters that should be considered include channel cross-sections, bank stability, width/depth ratios, riffle stability index, pools, large woody debris, fine sediment, pebble counts, macroinvertebrates, etc. The EPA especially appreciates inclusion of biological monitoring. Monitoring of the aquatic biological community is desirable since the aquatic community integrates the effects of pollutant stressors over time and, thus, provides a more holistic measure of impacts than grab samples.

Perhaps Deep Creek TMDL monitoring would allow for evaluation of Cabin Gulch Vegetation Treatment Project water quality effects. If that is the case, a brief discussion of the Deep Creek TMDL monitoring that would allow for identification and evaluation of upstream project related tributary effects would suffice. For your information, the EPA encourages use of the following reference materials in designing an aquatic monitoring program:

The Forest Service publication, "Guide to Effective Monitoring of Aquatic and Riparian Resources," RMRS-GTR-121, available at, http://www.fs.fed.us/rm/pubs/rmrs_gtr121.html .

The Forest Service publication, "Testing common stream sampling methods for broad-scale, long-term monitoring," RMRS-GTR-122, available at, http://www.fs.fed.us/rm/pubs/rmrs_gtr122.html .

"Aquatic and Riparian Effectiveness Monitoring Plan for the Northwest Forest Plan," Gordon H. Reeves, David B. Hohler, David P. Larsen, David E. Busch, Kim Kratz, Keith Reynolds, Karl F. Stein, Thomas Atzet, Polly Hays, and Michael Tehan, February 2001. Available on-line at, http://www.reo.gov/monitoring/

Monitoring Guidelines to Evaluate Effects of Forestry Activities in the Pacific Northwest and Alaska; Lee H. McDonald, Alan W. Smart and Robert C. Wissmar; May 1991; EPA/910/9-91-001;

"Aquatic Habitat Indicators and Their Application to Water Quality Objectives Within the Clean Water Act," Stephen B. Bauer and Stephen C. Ralph, 1999, EPA-910-R99-014. (This publication is available on-line at, http://www.pocketwater.com/ahi.php

Western Pilot Study: Field Operations Manual for Wadeable Streams; Environmental Monitoring and Assessment Program Protocols, Edited by David V. Peck, James M. Lazorchak, and Donald J. Klemm, April 2001, available on-line at, http://www.epa.gov/emap/html/pubs/docs/groupdocs/surfwatr/field/ewwsm01.pdf .

Montana DEQ's Water Quality Monitoring and Assessment information can be found on these websites,
http://www.deq.state.mt.us/wqinfo/monitoring/index.
http://www.deq.state.mt.us/wqinfo/monitoring/Functions.asp

Rapid Bioassessment Protocols for use in Streams and Rivers; James A. Plafkin, May 1989, EPA/444/4-89-001.

"Montana Stream Management Guide; for Landowners, Managers, and Stream Users", Montana Dept. Of Environmental Quality; December 1995.

The Forest Service Region 5 document entitled, "Water Quality Management for Forest System Lands in California: Best Management Practices," September 2000, is a useful reference for BMP development and BMP effectiveness monitoring. It can be found at the website, http://fsweb.r5.fs.fed.us/unit/ec/water/water-best-mgmt.pdf .

"Protocol for Developing Sediment TMDLs" EPA 841-B-99-004, October 1999

http://www.epa.gov/owow/tmdl/sediment/pdf/sediment.pdf

Vegetation Treatments

13. We appreciate the DEIS discussion of silviculture, fire regime, fire and fuels, etc., providing valuable information regarding forest composition and structure, natural succession and disturbance ecology, insect and disease conditions, hazardous fuels and fire risks. We support vegetative treatments to reduce fire risks, susceptibility to insect and disease agents, increase structural diversity, and restore aspen, whitebark pine, Ponderosa pine and grassland and shrubland vegetative communities.

    To facilitate improved public understanding of distinctions between proposed treatments we suggest that brief descriptions of proposed vegetative treatments be included with Appendix B identifying proposed treatments or perhaps in the Glossary (i.e., precommercial thin, shelterwood underburn, group shelterwood underburn, low severity burn, mixed severity burn, sage-grass burn, research underburning, etc.).

14. It would also be helpful if the FEIS clearly identified the extent to which existing large diameter trees would be harvested and/or retained. Large diameter trees (e.g., over 15 inches in diameter) are generally long lived and fire resistant, and provide important wildlife habitat. We support hazardous fuels reduction and vegetation management treatments, but generally recommend thinning from below treatments that retain the larger more vigorous trees, particularly trees of desired and threatened tree species (e.g., Ponderosa pine, whitebark pine, pages 7, 8). We also note that harvest of large fire resistant trees could potentially increase fire risk by opening up the canopy and promoting more vigorous growth of underbrush and small diameter trees that would increase fuels and fire risk in subsequent years, contrary to the hazardous fuel and fire risk reduction purpose and need.

    The alternatives descriptions in Chapter 2 of the DEIS do not indicate that large diameter Ponderosa pine and whitebark pine trees would be retained. We would be interested in the amount of large diameter trees (e.g., over 15 inches DBH), particularly Ponderosa pine and whitebark pine, that would be harvested and that would be retained on the landscape with the proposed harvest prescriptions. We support retention of large diameter Ponderosa pine and whitebark pine species, although we recognize that there may be site-specific circumstances that may require removal of individual large Ponderosa pine and whitebark pine if they pose safety hazards or need to be removed for insect infestation or access (e.g., along a skid trail, although we believe skid trail layout should avoid such large at risk trees if possible).

15. The DEIS reports that none of the action alternatives would treat stands that meet old growth characteristics (pages 22, 236). Alternatives 2 and 4 would affect approximately 2,698 acres of pileated woodpecker habitat, and Alternative 3 would affect approximately 1,620 acres of such habitat (pages 237, 238). It is also stated that the Northern Region

Snag Management Protocol would be used to manage snags (page 24), and that implementation of the project would not affect forest-wide viability of species that use old growth and cavity habitat (e.g., black-backed woodpecker, flammulated owl, northern goshawk, pileated woodpecker, hairy woodpecker). Accordingly, while we have concerns about potential impacts to wildlife species using cavity habitat, it appears that impacts are within acceptable thresholds and are unlikely to affect population viability.

Air Quality

16. The action alternatives include prescribed burning such as understory burning, activity fuels, pile burning, etc,. We support the use of prescribed fire for vegetation management and reduction of hazardous fuels, although, as you know smoke from fire contains air pollutants, including tiny particulates (PM_{10} and $PM_{2.5}$) which can cause health problems, especially for people suffering from respiratory illnesses such as asthma or emphysema, or heart problems. Particulate concentrations that exceed health standards have been measured downwind from prescribed burns. In addition, prescribed fire could have impacts on Class II areas and Federally-designated Class I areas, and smoke can reduce visibility and diminish the appreciation of scenic vistas. The nearest Class I area is the Gates of the Mountains Wilderness, which is approximately thirty-five miles northwest of the project area.

We are pleased that a burn plan in compliance with the Montana/Idaho Airshed Operating Guide will be prepared prior to initiating burning activities, and that location, timing and possible smoke effects would be disclosed in the local newspaper prior to burning (page 24). The nearest non-attainment area is Butte, MT for PM10 (59.5 miles to the southwest). The project area is within Airshed 6 (page 254). It may be of interest to the public to display the website for the Montana/Idaho State Airshed Group, http://www.smokemu.org .

Prescribed burning done in accordance with a certified State Smoke Management Plan such as the Montana Airshed Group is consistent with *EPA's Interim Air Quality Policy on Wildland and Prescribed Fire.*. This is Federal policy which reconciles the competing needs to conduct prescribed fires to manage vegetation and restore fire to fire adapted ecosystems while at the same time maintaining clean air to protect public health. A copy of the *Interim Air Quality Policy* can be found at: http://www.epa.gov/ttn/oarpg/t1/memoranda/firefnl.pdf , and a fact sheet can be found at: www.epa.gov/ttn/oarpg/t1/fact_sheets/firefl.pdf . EPA air quality guidance can be found at www.epa.gov/ttn/oarpg/t1pgm.html .

EPA supports judicious and well planned use of prescribed fire to restore fire to forest ecosystems. Smoke impacts from prescribed fire carried out during periods of favorable conditions for smoke dispersion are less hazardous than smoke impacts during a wildfire. It is important to disclose, however, that even though prescribed burns will be scheduled during periods of favorable meteorological conditions for smoke dispersal, the weather

can change causing smoke not to disperse as intended. This can be especially problematic for smoldering pile burns when a period of poor ventilation follows a good ventilation day. Also, if there is potential for smoke to drift into populated areas there should be public notification prior to burns so sensitive people (e.g., people suffering from respiratory illnesses such as asthma or emphysema, or heart problems) can plan accordingly.

Smoke dispersal and ventilation climate conditions may be found at this Forest Service website www.fs.fed.us/pnw/fera/ . We also recommend that efforts be made to educate home owners on the wildland-urban interface who build in fire adapted forest ecosystems regarding the need to use less flammable building materials and to manage fuel and vegetation near their homes (see websites www.firewise.org and www.firelab.org). General sound fire management practices include:

* Reducing the dangerous build-up of dead trees, branches, and vegetative matter on forest floors by using prescribed fire or the selective thinning, pruning, or cutting and removal of trees by mechanical means.

* Whenever possible, mechanical thinning can be used as an effective "pretreatment" to prescribed burning, although we also urge consideration of water quality, fishery, and ecological impacts along with air quality impacts when planning management actions (e.g., focusing mechanical treatments near roads to avoid or minimize new road construction). Mechanical treatments may be appropriate where the risk of the escape of prescribed burns is high and where nearby home developments may be threatened.

* Using smoke management techniques during burns to minimize smoke in populated areas as well as visibility effects. Each prescribed burn site will have unique characteristics, but smoke impacts can be minimized by burning during weather conditions with optimal humidity levels and wind conditions for the types of materials being burned. Smoke impacts can also be minimized by limiting the amount of materials and acreage burned at any one time. Careful scheduling of the many burning activities to coincide with proper climatological and meteorological conditions helps avoid air quality problems.

* Implementing fire hazard awareness and mitigation programs for the public. Closure of back country roads during high fire risk periods may reduce potential for human caused fires.

Wildlife/T&E Species

17. The discussion of effects to threatened or endangered species (e.g., gray wolf, lynx, grizzly bear, pages 219 to 221) indicate no direct effects on listed species. If the proposed activities could adversely affect threatened or endangered species (e.g., lynx, gray wolf, bald eagle) the final EIS should include the Biological Assessment and

associated U.S. Fish & Wildlife Service (USFWS) Biological Opinion or formal concurrence for the following reasons:

(1) NEPA requires public involvement and full disclosure of all issues upon which a decision is to be made;
(2) The CEQ Regulations for Implementing the Procedural Provisions of NEPA strongly encourage the integration of NEPA requirements with other environmental review and consultation requirements so that all such procedures run concurrently rather than consecutively (40 CFR 1500.2(c) and 1502.25); and
(3) The Endangered Species Act (ESA) consultation process can result in the identification of reasonable and prudent alternatives to preclude jeopardy, and mandated reasonable and prudent measures to reduce incidental take. These can affect project implementation.

Since the Biological Assessment and EIS must evaluate the potential impacts on listed species, they can jointly assist in analyzing the effectiveness of alternatives and mitigation measures. EPA recommends that the final EIS and Record of Decision not be completed prior to the completion of ESA consultation. If the consultation process is treated as a separate process, the Agencies risk USFWS identification of additional significant impacts, new mitigation measures, or changes to the preferred alternative.

Noxious Weeds

18. We appreciate the attention given in the DEIS to management and control of weeds in the project area (beginning on page 344). Weeds are a great threat to biodiversity and can often out-compete native plants and produce a monoculture that has little or no plant species diversity or benefit to wildlife. We are pleased that weed treatment measures are being used in the Cabin Gulch area, including chemical, biological and mechanical treatments (page 345), and that the proposed action alternatives would include an increased focus on weed mapping, monitoring and treatment in harvest units, along roads, and burn areas and landing/decking areas (page 347).

While we support use of weed control chemicals where needed, we encourage prioritization of management techniques that focus on non-chemical treatments first, with reliance on chemicals being the last resort, since weed control chemicals can be toxic and have the potential to be transported to surface or ground water following application. Discharging herbicides into streams and wetlands could adversely affect aquatic life and wetland functions such as food chain support and habitat for wetlands species. It is important that the water contamination concerns of herbicide usage be fully evaluated and mitigated. All efforts should be made to avoid movement or transport of herbicides into surface waters that could adversely affect fisheries or other water uses. EPA recommends that no herbicide spraying will occur in streams and wetlands or other aquatic areas (seeps, springs, etc.). Herbicides should be applied at the lowest rate effective in meeting weed control objectives. Please note that there may be additional

pesticide use limitations that set forth geographically specific requirements for the protection of endangered or threatened species and their designated critical habitat. This information can be found at http://www.epa.gov/espp/bulletins.htm .

Herbicides, pesticides, and other toxicants and chemicals must be used in a safe manner in accordance with Federal label instructions and restrictions that allow protection and maintenance of water quality standards and ecological integrity, and avoid public health and safety problems.

We suggest the following mitigation measures for herbicide spraying to reduce potential water quality and fisheries effects: 1) applicators are certified and fully trained and equipped with the and appropriate personal protective equipment; 2) applicators apply herbicides according to the label; 3) applicators should take precautions to avoid herbicide runoff to streams and wetlands, such as identifying flagging aquatic areas on the ground to assure that herbicide applicators are aware of and can avoid spraying in or near streams and wetlands (e.g., use of 50 feet no spray buffer zones adjacent to streams and wetlands) and applying herbicide only after careful review of weather reports to ensure minimal likelihood of rainfall within 24 hours of spraying; and 4) use treatment methods that target individual noxious weed plants in riparian and wetland areas (depending on the targeted weed species, manual control or hand pulling may be one of the best options for weed control within riparian/wetland areas or close to water).

Picloram (Tordon) is a particularly persistant, mobile and toxic herbicide. We recommend that road ditches leading to intermittent and perennial streams be flagged as no-spray zones and not sprayed with picloram based herbicides. We also recommend that picloram not be used at rates greater than 0.25 lbs/acre, and suggest that the Forest Service consider applications of persistent herbicides such as picloram only once per year.to reduce potential for accumulation in soil. Potential for persistant herbicides to accumulate in soil in harmful amounts are reduced if sites are treated only once per year (twice being the limit). Trade-offs between effective weed control and effects on soil productivity and leaching concerns may need to be considered. A second treatment application if needed should only occur after 30 days (or according to label directions).

For your information, Dow AgroSciences, the manufacturer of Tordon 22K, has recently developed supplemental labeling for Tordon 22K for areas west of the Mississippi River. They have directions for wick or carpet roller applications. Tordon 22K herbicide can be applied using wick or carpet roller equipment where drift presents a hazard to susceptible crops, surface waters, and other sensitive areas. One part Tordon 22K is mixed with 2 parts water to prepare a 33% solution. The wick method of application is more labor intensive but very effective at targeting particular noxious weeds adjacent to surface waters, wetlands, or protected plants.

Most picloram products, including Tordon 22K, are Restricted Use Pesticides (RUPs) requiring pesticide applicator certification to purchase and apply. It is important that U.S.

Forest Service employees be certified throughout the duration of the project. If commercial applicators will be contracted for RUP applications, we recommend checking to make sure their MT commercial RUP license is current. Please contact Montana Dept. of Agriculture at (406) 444-5400 for more information. Also, please note that registration for Access (which has picloram as an active ingredient) is cancelled.

We also recommend that weed treatments be coordinated with the Forest botanist to assure protection to sensitive plants, and coordinated with fisheries biologists and wildlife biologists to assure that sensitive fisheries and wildlife habitat areas are protected. You may also want to consider use of a more selective herbicide (clopyralid) for use in conifer associated communities to reduce impacts on non-target vegetation. We also note that spotted knapweed, which is a prevalent noxious weed species in western Montana, is non-rhizomatous and should be relatively easy to control with lower rates of the most selective low toxicity herbicides.

For your information, the website for EPA information regarding pesticides is http://www.epa.gov/pesticides/ . The National Pesticide Telecommunication Network (NPTN) website at http://nptn.orst.edu/tech.htm, which operates under a cooperative agreement with EPA and Oregon State University, has information on toxicity, mobility, and environmental fate on pesticides which may be helpful (phone number 800-858-7378).

19. We encourage the Townsend Ranger District to use preventative measures to reduce risk of noxious weed introduction and spread. We are pleased that all off-road logging equipment would be washed prior to entering the project area, and that disturbed areas would be reseeded (page 22). It will be important to seed disturbed sites such as landings, firelines, and along roads and skid trails with weed-free grass seed, since weeds infest and spread more easily on disturbed sites. We encourage tracking of weed infestations, control actions, and effectiveness of control actions in a Forest-level weed database. We are pleased that all off-road logging equipment would be washed prior to entering the project area, and that disturbed areas would be reseeded (page 22). Measures that we often recommend for preventing spread of weeds from source areas to uninfested areas include:

- Ensure that equipment tracks and tires are cleaned prior to transportation to an uninfested site.
- Focus control efforts at trail heads and transportation corridors to prevent tracking of seed into uninfested areas.
- Attempt to control the spread from one watershed to another to reduce water as a transport vector.
- If a localized infestation exists and control is not a viable option, consider rerouting trails or roads around the infestation to reduce available vectors for spread.
- Establish an education program for industrial and recreational users and encourage voluntary assistance in both prevention and control activities.

- Reseed disturbed sites as soon as possible following disturbance.

We note that weed seeds are transported by wind and water, animal fur, feathers and feces, but primarily by people. The greatest vector for spread of weeds is through motorized vehicles-cars, trucks, ATVs, motorcycles, and even snowmobiles. Weed seeds are often caught on the vehicle undercarriage in mud and released on the Forest. A single vehicle driven several feet through a knapweed site can acquire up to 2,000 seeds, 200 of which may still be attached after 10 miles of driving (Montana Knapweeds: Identification, Biology and Management, MSU Extension Service).

An effective noxious weed control program should consider restrictions on motorized uses, particularly off-road uses, where necessary. Off-road vehicles travel off-trail, disturbing soil, creating weed seedbeds, and dispersing seeds widely. Weed seed dispersal from non-motorized travel is of lesser concern because of fewer places to collect/transport seed, and the dispersal rate and distances along trails are less with non-motorized travel. Restrictions on motorized uses may also be needed after burning and harvest activities until native vegetation is reestablished in the disturbed areas to reduce potential for weed infestation of the disturbed sites. It is particularly important to avoid motorized travel in remaining roadless areas, since roadless areas are often reservoirs of native plants, and limitations on motorized travel in such areas can protect such areas from weed invasion and avoid the subsequent need to treat weeds..

Prescribed fire has the potential to stimulate weed growth (e.g., Dalmation toadflax or leafy spurge), and can destroy insects planted for biological weed control. We suggest that these considerations be evaluated for burn units. The effect of burning on the potential stimulation of noxious weeds be evaluated during site-specific project level analysis. Also, if sufficient vegetation is killed (e.g., by prescribed burning) it may warrant revegetation efforts. Where no native, rapid cover seed source exists, we recommend using a grass mixture that does not include aggressive grasses such as smooth brome, thereby allowing native species to eventually prevail. Mr. Phil Johnson, Botanist, Montana Dept. of Transportation, in Helena at 444-7657, may be able to provide guidance on revegetation with native grasses.

We also note that hay can be a source of noxious weed seed. Hay/straw is used as mulch to slow erosion and encourage seed germination, and used to feed horses in hunting and recreation camps, and as wildlife feed during harsh winters. The Federal Noxious Weed Act of 1974 prohibits the interstate transport of noxious weeds or weed parts, such as seed. Montana has a weed free certification program for hay. We support Forest Service requirements to use certified weed free hay in permits or projects, since cattle that are released on grazing allotments or horses used on public lands can transport undigested weed seed and spread it in their manure. Another option for preventing the introduction of noxious weeds it to require cattle and horses, especially those coming from areas with noxious weeds, to be penned and fed weed free hay for several days prior to being released on public lands.